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Jong-hoon Lee

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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

LAMB, CHRISTOPHER RAY

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/645,868
Filing Date: August 22, 2003
Appellant(s): LEE ET AL.

Michael Badagliacca
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed September 30th, 2009 appealing from the Office action mailed October 30th, 2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4830290	Takasago et al.	3-1998
6341113	Kamiyama, Hideyo	1-2002

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6714493	Kishimoto et al.	3-2004
2002/0031069	Nakane et al.	3-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8, 10-13, 15, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takasago et al. (US 4,830,290) in view of Kamiyama (US 6,341,113), and further in view of Nakane et al. (US 2002/0031069), and further in view of Kishimoto et al. (US 6,714,493).

Regarding claim 1:

Takasago discloses a method of controlling a recording operation of an optical disc recording apparatus which records data to a recordable optical disc having a defect (column 2, lines 30-45), the method comprising:

based on a length of the defect, classifying the defect into a first category indicating that the data is normally recordable and a second category indicating that the data is not normally reproducible even though the data is normally recordable (column

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3, lines 25-60: the first category is when the duration is less than T_1 , the second when it is between T_1 and T_2 ;

detecting the defect while recording the data to the recordable optical disc (column 3, lines 25-60);

determining the length of the defect and a type of the defect based on the length of the defect (column 3, lines 25-60); and

as a result of the determining, if the defect corresponds to the first category, assuming that the data is normally recorded in a defect region and continuing recording of the data (column 3, lines 25-60: time less than T_1), or if the defect corresponds to the second category, further recording of the data recorded in the defect region in another region (column 3, lines 25-60: time between T_1 and T_2 ; it is re-recorded "in an alternate sector in the same track"),

the classifying comprising comparing the length of the defect with first and second times (column 3, lines 25-60).

Takasago does not disclose:

(A) "If the defect is detected, continuing recording of the data in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs."

(B) conducting the further recording "without a read-after-write operation."

(C) wherein the first and second times are "determined according to a recording speed of the optical disc."

Regarding (A):

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Kamiyama discloses: if a defect is detected, continuing recording of the data in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs (column 1, lines 10-25).

Kamiyama discloses that this is necessary, because it is impossible to generate an appropriate tracking signal otherwise (column 1, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Takasago wherein If the defect is detected, continuing recording of the data in the recordable disc while controlling a servo unit to hold a servo tracking by using a previous servo control value which is used before the defect occurs, as taught by Kamiyama.

The motivation would have been to generate an appropriate tracking signal, keeping the laser on-track, as taught by Kamiyama.

Regarding (B):

In Takasago, if the time is between T_1 and T_2 , there is further recording of the data recorded in the defect region in another region if it is deemed necessary during a read-after-write operation (column 3, lines 25-60).

Nakane discloses that when recording at a high transfer rate is required, a read-after-write operation ("verifying reproduction") should be omitted (paragraph 144).

Therefore it would have been obvious to one of ordinary skill at the time of the invention to include in Takasago in view of Kamiyama wherein the further recording is conducted without a read-after-write operation: instead, the information is automatically

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recorded in another area (following Takasago column 3, lines 25-60; also Nakane paragraph 118).

The motivation would have been to enable recording at a high transfer rate.

Regarding (C):

Kishimoto discloses that an optical disc apparatus may have a plurality of different speeds (column 11, lines 55-65).

It would have been obvious to include in Takasago in view of Kamiyama, and further in view of Nakane, wherein the apparatus records at a plurality of different speeds.

The motivation would have been to record at a higher and/or more appropriate speed.

If Takasago in view of Kamiyama, and further in view of Nakane, can record at a plurality of speeds, it must determine the first and second times according to a recording speed of the optical disc.

The rationale is as follows:

Takasago is measuring a defect size required to cause off-track in a reproducing apparatus (column 3, lines 25-60) by measuring the length (i.e., time) of a defect signal. If the apparatus is recording at x2 speed, the same size defect will produce a signal half as long as if the apparatus is recording at x1 speed. Therefore the speed must be taken into account in order to accurately measure the size of the defect.

Regarding claim 2:

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Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, discloses: classifying the defect into a third category indicating that the data cannot be normally recorded and the defect causes a servo error (Takasago column 3, lines 25-60: time greater than T_2); as a result of the determining, if the defect corresponds to the third category, stopping the recording operation (Takasago column 6, lines 40-50).

Regarding claim 3:

In Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, the recordable optical disc is a recordable compact disc (it is clear from Takasago's description in column 1 that Takasago's disc is a recordable compact disc).

Regarding claim 4:

Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, does not disclose that the recordable optical disc is a recordable digital video disc.

Nakane discloses recordable digital video discs (paragraphs 1-9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Takasago in view of Kamiyama, and further in view of Nakane, wherein the optical disc is a recordable digital video disc.

The motivation would have been to manage defects on such a disc, making the method more versatile.

Regarding claims 5-7:

All elements positively recited have already been identified with respect to claims 1-4.

Regarding claims 8, 10, and 11:

These are apparatus claims corresponding to method claims 1-4. Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, discloses an apparatus to accomplish the method. All elements of this claim have been identified with respect to the earlier rejections.

Regarding claim 12:

Takasago discloses a controller (Fig. 1: 30) and thus Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, includes a program executed by a processor to record data. All other elements of this claim have already been discussed with regards to earlier claims.

Regarding claim 13:

Most elements of this claim have already been discussed with regards to earlier claims. In Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, the first reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded (the T_1 threshold is one where the off-track is not considered to be severe enough to require writing in a different region: column 3, lines 1-60).

Regarding claim 15:

In Takasago in view of Kamiyama, and further in view of Nakane, and further in view of Kishimoto, the second reference length is a maximum length of the defective region where a servo status is stable, but errors occur when the data is read after being recorded (the servo is not considered “off-track” to the point where the recording operation has to be stopped, but the data must be rewritten in an alternate sector on the track: column 3, lines 1-60).

Regarding claim 16:

Most elements of this claim have been discussed with regards to earlier rejections. Regarding “wherein the reference length is a maximum length of the defective region where a servo status is stable and data is readable without any additional operation of the optical disc recording apparatus after data is recorded,” see Takasago column 3, lines 30-60: if “the reference length is set shorter than a time necessary to cause off-track,” it is the maximum length or shorter, meaning that the claim falls within the range disclosed by Takasago, and for “and if the defective region is longer than the reference length, recording the data in another region of the recordable optical disc without a read-after-write operation,” recording without a read-after-write operation is taught by Nakane as discussed above.

Regarding claims 18 and 19:

All elements positively recited have been discussed with regards to earlier claims. No further elaboration is necessary.

(10) Response to Argument

For ease of understanding, the response will be organized the same way as appellant's arguments.

-- Review of the prior art --

First appellant merely provides a brief summary of the prior art used in the rejection; there is no disagreement here.

- Independent claims 1, 8 and 16; claims 2-4, 10-11 and 18-19 dependent therefrom -

First claim feature

Here appellant argues that although Kishimoto teaches a plurality of different speeds, it "does not teach comparing according to a recording speed of a disc." In other words, appellant argues, Kishimoto does not teach "how to determine length and times according to the variable speed."

It's worth stepping back a moment and discussing the purpose of the two times in the base reference, Takasago. As discussed in, e.g., column 3, lines 25-60 of Tasakago, the first time is set based on the time to cause off-track due to abnormality, and the second time is set based on the time necessary to cause off-track due to a defect on the disc.

One of ordinary skill would understand that these two conditions depend on the recording speed. First, Tasakago itself discloses that the times may be different

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depending on the different characteristics of the optical disc apparatus (column 7, lines 10-20). Since Kishimoto teaches that speed is one possible characteristic, it follows from the two that the times would have to be adjusted based on the speed. Note that although Kishimoto is not directed to defect detection based upon time, Kishimoto does disclose that various other settings of the apparatus do have to be changed when the speed is changed (e.g, the loop gain, as per column 11, lines 55-65).

Therefore it certainly follows from the references that the times must be set according to the speed. This addresses appellant's first point. Their second argument is that Kishimoto does not teach exactly how to determine the times according to the speed: however, this determination is within the level of ordinary skill in the art.

Note that Tasakago itself doesn't give specific times. Already it is implicit in Tasakago that one of ordinary skill is capable of determining these times, based on the apparatus characteristics, on their own. There's nothing remarkable about adapting a drive for different speeds that one of ordinary skill would find particularly daunting: for years, most commercially available drives have been able to record at various speeds, as evidenced by Kishimoto, so one of ordinary skill would be undoubtedly used to adjusting the various disc parameters for different speeds. There's no evidence that Tasakago's two parameters would be any more difficult to adjust.

Second claim feature

In this section appellant begins by arguing that the claim recites "determining a type of the defect based on the length of the defect," and that in Takasago, the defect is classified according to the duration of the off-track signal.

However, the duration of the off-track signal is a measure of the length of the defect. Note that appellant's own invention measures the defect length the same way that Takasago does: by comparing the tracking error signal to a time. Appellant cannot reasonably argue that Takasago measures something different when Takasago performs the same process.

Next, appellant argues that Takasago is directed to detecting an external disturbance, whereas the present invention "may be used to detect dirt, dust, scratches, or disk manufacturing errors."

The response to this comes in two parts: first, this argument is irrelevant since the type of defect detected is not claimed; and second, even if it were, Takasago does disclose this. Remember that in Takasago the second time is set to detect defects on the disc itself: that certainly includes dirt, dust, scratches, etc.

Combination of References

Here appellant argues that the references were improperly combined. This argument is really directed to the rationale for combining Kishimoto with the other references. Appellant points out that that the motivation relied upon by the Examiner was to record "at a higher and/or more appropriate speed, " and then argues that this

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motivation might lead to an apparatus with a fixed higher speed rather than a variable speed.

It's not clear why this would matter. Even if appellant is completely right and the combination would result in a single fixed higher speed, the two times would have to be set based on the speed chosen, for the reasons discussed above, and the combination would still meet the claim language.

Indeed, in Takasago itself the two times must have been set based on the whatever speed Takasago operates at, and it can probably be argued that Kishimoto's teaching is not necessary at all since this claimed feature is most likely inherent to Takasago. Note that the claims do not in any way recite that the speed is variable, just that the times are set based on the speed. A device that operates at a single fixed speed still meets this language as long as the times are set based on the apparatus characteristics as Takasago teaches.

However, since Takasago doesn't discuss the speed whatsoever Kishimoto was provided just to make the evidence clear.

In any case, this argument is moot because Kishimoto clearly teaches that the speed can be variable (e.g., column 11, lines 55-65). The benefits of having a selection of speed modes over a single fixed speed are so self-evident that they hardly need to be discussed; however, if appellant requires an example, Kishimoto itself provides one. As seen, in, for example, Fig. 6A, Kishimoto provides one benefit of multiple speed modes: if a higher speed results in an abnormal state, the speed can be lowered to allow for successful operation.

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- Independent claim 5 and dependent claims 6-7 –
- Independent claims 12-13 and dependent claim 15 –

In these sections appellant merely repeats the arguments they made against the rejection of claim 1. These arguments are not persuasive for the reasons discussed above.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,
/Christopher R Lamb/
Examiner, Art Unit 2627

Conferees:
/wy/
Wayne Young
Supervisory Patent Examiner, Art Unit 2627

/Joseph H. Feild/
Supervisory Patent Examiner, Art Unit 2627